

Remarks

Reconsideration of this application as amended is respectfully requested.

Claims 7 and 17 stand rejected under 35 U.S.C. §112, second paragraph.

Claims 1-6, 8-16, and 18-20 stand rejected under 35 U.S.C. §102(b) as being unpatentable over "Monolithic Transformers and Their Application in a Differential CMOS RF Low-Noise Amplifier" (IEEE Journal of Solid-State Circuits, Vol. 33, No. 12, 12/98) by Zhou et al. ("Zhou").

Claims 1-20 stand rejected under 35 U.S.C. §102(a) as being unpatentable over "A 1-V Transformer-Feedback Low-Noise Amplifier for 5-GHz Wireless LAN in 0.18- $\mu$ m CMOS" (IEEE Journal of Solid-State Circuits, Vol. 38, No. 3, 3/2003) by Cassan et al. ("Cassan").

The examiner has rejected claims 7 and 17 under 35 U.S.C. §112, second paragraph, as being indefinite. The examiner has stated that the recitation of "pair of mutually coupled inductors" is unclear. In response, applicant has amended claims 7 and 17 so that the pair of mutually coupled inductors recited therein agree with their antecedents in claims 1 and 11.

Applicant submits that claim 1 is not anticipated by Zhou because Zhou does not disclose a differential amplifier having a pair of transistors and a pair of mutually coupled inductors that are arranged to bias the transistors as claimed in claim 1. The examiner has stated that Figure 3 of Zhou shows a pair of mutually coupled inductors T1/T2 that are arranged to bias a pair of transistors M1 and M2. (Page 3, first paragraph, Office Action, 10/27/05).

Applicant respectfully submits that the transformers T1 and T2 of Zhou do not bias the transistors M1 and M2

of Zhou. Instead, the transformer T1 of Zhou provides inductances at the input gates of the transistors M1 and M2 (Zhou, page 2023, right column, lines 7-10) and the transformer T2 of Zhou provides gain control and a DC path for a bias current  $I_{ref}$  to reach the transistors M3 and M4 (Zhou, page 2024, right column, lines 2-8).

In further contrast, Figure 3 of Zhou shows that the transistors M3 and M4 are biased by a current source  $I_{ref}$ . There is nothing in Zhou to indicate that the bias current source  $I_{ref}$  is provided by mutually coupled inductors as claimed in claim 1. Furthermore, figure 4 of Zhou shows a biasing circuit for the transistors M3 and M4 that does not include mutually coupled inductors as claimed in claim 1. Instead, the biasing circuit in figure 4 of Zhou is made of a set of transistors M22, M44, M66, M8, and a current source  $I_{ref}$ . (Zhou, page 2024, right column, last two lines through page 2025, left column, first two lines).

Given that claims 2-10 depend from claim 1, it follows that claims 2-10 are not anticipated by Zhou.

It is also submitted that claims 11-20 are not anticipated by Zhou because claims 11-20 include limitations similar to the limitations of claim 1. Therefore, the remarks stated above with respect to claim 1 and Zhou also apply to claims 11-20.

Applicant further submits that claim 1 is not anticipated by Cassan because Cassan does not disclose a differential amplifier having a pair of transistors and a pair of mutually coupled inductors that are arranged to bias the transistors as claimed in claim 1. The examiner has stated that Figure 7 of Cassan shows a pair of mutually coupled inductors LD that are arranged to bias a pair of transistors Q1. (Page 3, last paragraph, Office Action, 10/27/05).

Applicant respectfully submits that the inductors LD of Cassan do not bias the transistors Q1 of Cassan. Instead, the inductors LD of Cassan provide impedance matching to a 50 ohm load. (Cassan, page 432, left column, lines 19-21). Furthermore, the inductors LD of Cassan are not mutually coupled inductors as claimed in claim 1. Instead, the inductors LD of Cassan are differentially excited symmetric inductors. (Cassan, page 432, right column, lines 5-7).

Given that claims 2-10 depend from claim 1, it follows that claims 2-10 are not anticipated by Cassan.

It is also submitted that claims 11-20 are not anticipated by Cassan because claims 11-20 include limitations similar to the limitations of claim 1. Therefore, the remarks stated above with respect to claim 1 and Cassan also apply to claims 11-20.

It is respectfully submitted that in view of the amendments and arguments set forth above, the applicable objections and rejections have been overcome.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 50-3718 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

Date: 1-27-06

By: Paul H. Horstmann  
Paul H. Horstmann  
Reg. No.: 36,167